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Environmental Impact Statement

Record of Decision

Larson Reforestation and Fuel Reduction Project

Stanislaus National Forest, Groveland Ranger District
Mariposa and Tuolumne Counties, California



Larson stand 38010, which was planted in 1992. It shows a diversity of vegetation species, including ponderosa pine, Douglas-fir, white fir, oaks, grasses, and bear clover. Proposed treatments include mechanical shredding for precommercial thinning, and ground glyphosate application for noxious weed control.

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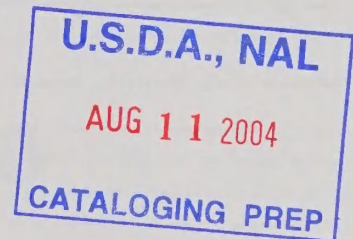
**Larson Reforestation and Fuel Reduction Project
Environmental Impact Statement
Record of Decision**

**Stanislaus National Forest
Groveland Ranger District
Tuolumne and Mariposa Counties, California**

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Abstract

An Environmental Impact Statement (EIS) that discusses alternatives for reforestation, fuel reduction, and noxious weed management in the 1987 Larson Fire area is available for public review in the Forest Supervisor's Office at 19777 Greenley Road, Sonora, CA 95370. This Record of Decision (ROD) documents the Responsible Official's decision pertaining to the proposed action identified in the EIS.

The decision selects Alternative 4. Alternative 4 proposes 3,775 acres of conifer planting, 750 acres of precommercial thinning, 4,828 acres of prescribed burning, 2,474 acres of noxious weed treatments, and other reforestation, fuel reduction, noxious weed management treatments within the 13,306 acre Larson project area. Site preparation, release, and noxious weed management activities include the use of herbicides to control vegetation.

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Larson Reforestation and Fuel Reduction Environmental Impact Statement Record of Decision

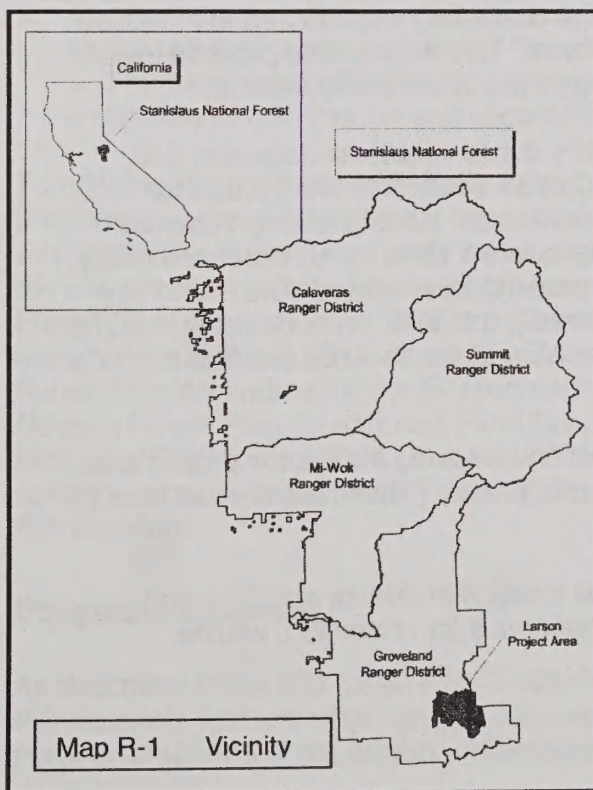
**Stanislaus National Forest
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Background

Location

The Larson project area is on the Groveland Ranger District of the Stanislaus National Forest (Map R-1). It borders Yosemite National Park on the east, Big Grizzly Mountain and Trumbull Peak on the south, and Pilot Ridge on the north. The Larson Project area encompasses 13,306 acres. The project area watersheds are primarily within the Merced River and a very small portion of the Tuolumne River watersheds. The project area is mostly within Mariposa County, with very small portions in Tuolumne County.



Purpose and Need for Action

The EIS (page I-4) describes the purpose and need for action.

The Larson area was formerly forested with mixed conifer species with a range of stocking densities over 84% of its area. It is a popular location for many types of recreation, and an important deer winter range. In 1987, the Larson Fire burned as part of the 147,000 acre Stanislaus Complex Fire. Much of the area burned with a high intensity that killed most of the existing conifers, leaving only 13% of the area in a mixed conifer forested condition. The larger dead trees were salvage logged for timber products; smaller fire-killed trees were harvested as biomass product and chipped for power generation. Small portions have been reforested.

The Larson Project area has experienced similar post-fire conditions as have resulted from other large fire occurrences on the Stanislaus National Forest. In other burned areas, significant natural regeneration of conifer trees following the wildfire, and the associated benefits of a coniferous forested environment, did not occur. In Larson, the recovery of a forested environment with diverse structure and composition at levels that will meet future resource needs for wildlife, recreation, watershed and timber, has not begun. Dense shrub fields have replaced much of the former conifer forest. Many of the remaining fire-killed trees have since fallen, creating a high fuel loading. In addition, noxious weeds have spread since the fire.

Without vegetation management, the prognosis is for extremely slow natural forest recovery, punctuated by the frequent return of high-intensity wildfire. In many areas, there are few conifer seed sources, minimizing the chance of natural regeneration. Relying on natural regeneration and succession to reforest the Larson area to desired levels would take many centuries for seed sources to evolve, and canopy closure to shade out brush fields, without interruption by wildfire.

By reforesting the area, and moving it toward a more fire resilient ecosystem, renewable resources such as wildlife habitat, conifer forested ecosystems, botanical diversity, watershed quality, recreational activities, and related economic effects to local communities would recover toward pre-fire levels at an accelerated rate.

Project Purpose: The purpose of the Larson Reforestation and Fuels Reduction Project is to manage the vegetation and fuel levels in order to move from the existing condition, seventeen years after the 1987 Stanislaus Complex Fire, toward achieving the desired future conditions which incorporate diversity by increasing the extent and density of conifers.

Reforestation of the burned area is designed to recover a forested environmental setting, by implementing treatments that are effective against the competing vegetation and to reduce the re-occurrence of high severity fire in the project area. This will start the process toward changing the succession pattern to a mature forest type in a more timely fashion.

Heavy fuel loading within the project area is caused by dense vegetation regrowth and woody debris remaining from the 1987 fire. Fuel reduction treatments are needed for protection of the reforested area and other values at risk, such as neighboring Yosemite National Park and private land. Fuel reduction treatments will allow for an increased ability to control fire, which will reduce threats to lives and property from wildfire. The risk to key natural and cultural resources will be lowered. Eventually, this area could be brought into a fire management regime in which frequent burning or natural fire could be used as a management tool.

Project Needs: There are a number of needs for action in moving the Larson project area from the existing condition toward the Desired Future Condition. These are derived from the Forest Plan:

1. To re-establish and promote recovery of a conifer forest with diverse structure and composition at levels that will meet future resource needs for recreation, wildlife, watershed and timber.

2. To restore and enhance habitat for riparian and aquatic species by enhancing microclimate conditions, increasing species diversity and providing for the future recruitment of snags and down woody material.
3. To improve long term watershed and riparian stability and function by enhancing and restoring the species diversity and structural composition of the forest surrounding riparian communities.
4. To maintain and enhance the critical winter deer range centered at Anderson Flat by increasing the thermal cover available and reducing the amount of large unpalatable brush that does not provide quality forage.
5. To protect values at risk of fast moving stand-replacing wildfire in forested habitat, including habitat for Threatened, Endangered, and Sensitive species, adjacent National Forest, National Park, and private lands, watersheds and public safety, by moving the project area toward a late-seral stage forested condition.
6. To reduce the severity of future wildfires in the area by eliminating fuel ladders from the ground into the canopy and provide a safer fire suppression environment with reduced suppression costs.
7. To create the conditions necessary to safely reintroduce fire to the ecosystem through fuels and vegetation management.
8. To create a Defensible Fuel Profile Zone, that serves as a defensible area and as an anchor point for establishing control lines which will facilitate the management of wildfires and prescribed burning, by fuels and vegetation management.
9. To prevent new infestations of noxious weeds and the spread of existing noxious weeds as the result of project activities. To reduce the quantity and extent of noxious weeds, and manage their adverse impacts on ecosystem function, contribution to fine fuels, competition in plantations and impacts to native plants.

To address this Purpose and Need, a proposed action was developed and an EIS was prepared to assess the potential impacts of the proposed action and three alternatives for reforesting the burned area while managing fuel levels and noxious weeds. The Final EIS is the site specific project analysis that draws upon existing direction provided in the National Forest Management Act of 1976, the Stanislaus National Forest Land and Resource Management Plan of 1991, as amended, including amendments by the Sierra Nevada Forest Plan Amendment Final Environmental Impact Statement of 2001, and the Sierra Nevada Forest Plan Amendment Final Supplemental Environmental Impact Statement and Record of Decision, of 2004. The Final EIS examines in detail the probable environmental consequences of implementing each of the alternatives and provides the analytical basis for this decision.

Proposed Action

As described in the EIS (page I-15, II-12), the Proposed Action (Alternative 1) consists of reforestation, fuel reduction, and noxious weed control measures needed to achieve the purpose and need of the project. Alternative 1 consists of combinations of site preparation,

conifer planting, release, precommercial thinning, prescribed burning, defensible fuel profile zone construction, noxious weed control, road maintenance, and other treatments on forest lands considered suitable for forest growth within the Larson fire area.

The need to move this project area toward a diverse conifer forest composition and structure at the accelerated rate directed in the Forest Plan, as amended, is affected by the choice between herbicide use and alternative methods to ensure seedling survival and control noxious weeds. Based on the site-specific analysis described in this EIS, the intensive vegetative competition found in the project area would preclude meeting stocking and species goals for reestablishment of a healthy forest in non-herbicide alternatives, which would affect other goals for habitat and watershed enhancement and protection.

To meet management objectives of conifer survival, multiple herbicide treatments are essential where bear clover and/or sprouting shrubs exist. Non-herbicide methods of controlling bear clover and/or sprouting shrubs are not feasible for this project. Non-herbicide methods for areas of non-sprouting shrubs and grasses are ineffective, as these species show rapid regrowth and invasion in treated areas. Non-herbicide methods for controlling the density and spread of noxious weed infestations are ineffective for the scale of this project. Manual and mechanical methods simply do not control vegetation as well as herbicides.

To be successful, reforestation activities proposed for this project include site preparation to remove competing vegetation and create plantable sites for conifer seedlings, planting each seedling according to guidelines specified in the certified silvicultural prescription, release by treating competing vegetation in subsequent years until survival of the planted trees is established, and thinning of natural regeneration, established plantations, and residual conifers to retain vigorous growth and reduce susceptibility to fire. Site preparation and release will require the use of herbicides when prescribed, for many of the reforestation units. Elsewhere, when prescribed, mechanical treatments and prescribed burning will provide adequate site preparation.

The proposed activities would be implemented over a ten year period, and include 4,028 acres of site preparation, 3,963 acres of conifer planting, 5,769 acres of fuel reduction treatments, 2,011 acres of noxious weed control treatments, and other treatments described in detail in the Final EIS, over the life of the project. Aerial applications of glyphosate herbicide for site preparation are proposed in blocks (several stands joined together) to promote efficiency (optimal and essential for reforestation) and to reduce health risks to workers by limiting potential exposure to herbicides. Aerial applications are shorter in duration and require a smaller number of workers than ground applications. Herbicide applications for noxious weed control are included within units with silvicultural herbicide applications.

Decision to be Made

As identified in the Forest Service Manual (FSM), the Forest Supervisor is the Responsible Official for all activities proposed. Given the purpose and need, the proposed action and alternatives to the proposed action, and the environmental consequences of each action, the Forest Supervisor, as the Responsible Official, shall decide whether and by what means the Larson Project area should be reforested and have fuels reduced to meet a variety of resource needs. The Forest Supervisor may decide to: (1) select the proposed action,

(2) select one of the alternatives, (3) select one of the alternatives after modifying the alternative with additional mitigating measures or combination of activities from other alternatives, or (4) select the no action alternative, choosing to take no action at this time.

Decision

It is my experience that decisions on social, economic, and resource issues often must be made without a clear consensus among all interested parties. Such decisions must consider the land, the resources, and the needs and wishes of the American public. Although planning efforts on the Stanislaus National Forest have addressed forest management issues and fostered public participation in public land management, it is apparent that some controversies remain unabated because of fundamental disagreements within our society about management of the National Forests.

The Stanislaus National Forest has been, and will continue to be, an important source of wildlife habitat, high quality water, timber, recreation and range. Conflict arising over the management of these resources increases as the demand for limited resources grows. This is a reflection of the importance people place on their National Forests and the valuable diversity of the resources they provide. Public response to this project certainly made that clear in the diversity and substance of views expressed. I encourage everyone to take the time to read the portions of the Final EIS that relate to the aspects of the project in which they are interested, and to reach their own conclusions regarding the project.

I acknowledge the concern, expressed by some people, about the use of chemical herbicides, particularly the use of aerially-applied herbicides, as related to water quality, riparian/aquatic species, oaks, wildlife, and public safety. In the context of all known issues, the best available science indicates the use of herbicides is appropriate and essential to re-establish a forested ecosystem in the Larson project area. I have carefully reviewed all of the arguments and evidence that support or oppose the use of herbicides for this project. This includes all of the public comments on the Draft EIS, meetings with public groups and individuals, the scientific basis described in the Final EIS, results of other herbicide projects on the Stanislaus National Forest, and my own understanding of the field conditions in the project area. In the Final EIS, I find that the analysis thoroughly displays all expected effects, and indicates that the specific herbicides analyzed are environmentally appropriate as proposed for use. I have concluded that if both aerial and ground herbicides are not used, management objectives of the Larson area will not be achieved. If herbicides are not used, the recovery of forest values will be substantially delayed in the Larson project area. Consequently, there will be a continued loss of habitat for mature-forest dependent wildlife, and increased risk of adverse effects to natural and cultural resources from wildfire.

Prior to making my decision, I reviewed the purpose and need, proposed action, alternatives, and environmental consequences. I considered all public comments on the Draft EIS. In addition, I consulted with the Groveland District Ranger, Groveland Ranger District staff, Forest Supervisor's Office staff, Regional Office staff, Larson Interdisciplinary Team, members of the public, legislative contacts, Tribal representatives, and representatives of other interested government agencies. Based upon this review, **I have decided to select Alternative 4 for implementation in the Larson Project area.**

With this decision, I also fully adopt all of the demonstratedly effective management requirements and mitigation measures described in Chapter II of the Final EIS (page II-17).

These design elements will be fully incorporated into project implementation. In addition, monitoring is included as an integral part of this project, and will be carried out as described in Appendix C of the Final EIS. All practicable means of avoiding or minimizing environmental harm have been adopted (40 CFR 1505.2(c)) as management requirements for this project, as described in Chapter II of the Final EIS.

Alternative 4 (Preferred Alternative)

Alternative 4 proposes project implementation of site preparation, planting, release, precommercial thinning, and fuel reduction treatments using all available techniques, methods, and equipment, including aerial (helicopter) herbicide applications for site preparation. Aerial applications are only being proposed for site preparation where no other method will accomplish reforestation objectives (specifically they are proposed for slopes too steep for mechanical shredding or brush too tall and dense for ground herbicide applications). Alternative 4 differs from the proposed action (Alternative 1) by incorporating more mechanical site preparation, slightly less planting, less aerial herbicide applications, and more ground herbicide applications. Also, Alternative 4 proposes that noxious weeds would be treated with herbicide applications in treatment stands not otherwise planned for herbicide treatments. This alternative is fully described in Chapter II of the Final EIS.

In summary, implementation of Alternative 4 would include 3,775 acres of planting with conifer seedlings, 750 acres of thinning treatments, 4,828 acres of prescribed burning, and 2,474 acres of noxious weed treatments. Alternative 4 includes 1,189 acres of aerial herbicide application for site preparation, and 1,534 acres of ground herbicide application for site preparation. The first herbicide release ground application includes 4,431 acres. Table R-1 (page ROD-6) provides a summary of the acres proposed for each treatment under Alternative 4. These acres proposed for herbicide applications are not cumulative, but reflect multiple treatments on the same acres over the life of the project. Work is planned to be distributed over a ten year period.

Reasons for the Decision

Alternative 4 meets the purpose of the project and is the alternative that best meets the needs identified for this project. I have considered each of the needs as a factor in my decision.

Reforestation: This alternative re-establishes a mixed conifer forest on 3,775 acres and promotes growth and improves resilience to wildfire on 750 acres of existing plantations, conifer regeneration and residual conifer stands through precommercial thinning. This reforestation is in accordance with the National Forest Management Act of 1976, in which "it is the policy of Congress that all forested lands in the National Forests shall be maintained in appropriate forest cover..." Reforestation meets Forest Plan direction to "reestablish desirable tree species by artificial methods on deforested areas," and Sierra Nevada Forest Plan Amendment Supplemental EIS Record of Decision (2004) direction to "restore species composition and structure following large-scale, stand-replacing disturbance events" and that it be at a pace faster than that of natural succession, as to "accelerate the development of key habitat and old forest characteristics."

One factor I considered strongly in my decision is that Alternative 4 achieves almost the same amount of reforestation as Alternative 1, but does so by reducing the risk of adverse effects from aerial application of herbicide for site preparation, particularly to residual oaks and hardwoods, on 40% fewer acres and limits aerial application to only those acres where no other method will be effective. Alternative 4 proposes to reforest 188 fewer acres than Alternative 1, or only 5% less conifer planting. Under Alternative 4, about 45% of the project area (5,919 acres of proposed plantations, existing plantations, natural regeneration, and residual mixed conifer stands) would develop into well-stocked stands of mixed conifer forest, including residual and sprouting hardwood species, compared with 46% (6,107 acres) under Alternative 1. Alternative 4 reforests considerably more of the project area than Alternative 2 or Alternative 3.

Fuel Reduction: Alternative 4 reduces fuel loading and the short- and long-term risk of high intensity wildfire in the project area, with 4,828 acres of prescribed burning treatments. These actions will meet Forest Plan objectives to "prepare timber harvest areas for natural or artificial regeneration, to improve range or wildlife habitat, to develop and maintain fuel profiles that contribute to the most cost efficient Fire Protection program consistent with Forest Plan action." Given the fire history of the Larson area, and the estimated fire return interval of 0-35 years (FEIS, page III-90), a stand-replacing wildfire is a matter of 'when', not 'if', in existing chaparral types. Actions taken now can influence the extent and intensity of future fires by controlling the amount and configuration of fuels in the Larson project area.

In evaluating the difference between the alternatives, I looked at how well they met fuel reduction objectives. Alternatives 1 and 4 equally meet the objectives (in terms of acres treated) of the Stanislaus National Forest Fire Management Plan, by implementing strategically designed fuel treatments to reduce wildland fire spread and intensity and reestablishing fuel profiles or vegetative conditions more characteristic of natural fire regimes through the use of prescribed fire and alternative treatments.

Table R-1, Alternative 4

TREATMENTS	ALTERNATIVE 4	
	STANDS	ACRES
SITE PREPARATION		
Mechanical		
Shred	37	987
Tractor - Spread Piles	2	6
Tractor - Pile	4	76
Crush	1	25
Chemical		
Air Glyphosate	32	1189
Ground Glyphosate	36	1450
Ground Triclopyr	4	84
PLANTING		
Plant	119	3642
Cluster	12	133
Replant*	117	3632
Replant Cluster*	12	133
RELEASE**		
1st Ground Glyphosate	113	3651
1st Ground Triclopyr	17	469
1st Ground Glyphosate Radius	3	118
1st Ground Triclopyr Radius	7	193
2nd Ground Glyphosate	104	3140
2nd Ground Triclopyr	14	451
2nd Ground Glyphosate Radius	9	117
2nd Ground Triclopyr Radius	1	7
THINNING		
Mechanical Shred	12	526
Hand Fell and Pile	10	151
Hand Fell Lop and Scatter	4	73
PRESCRIBED BURNING		
Broadcast	107	3534
Underburn	45	1027
Pile Burn	13	267
DEFENSIVE FUEL PROFILE ZONE		
DFPZ Ground Glyphosate	3	50
Tractor Pile	2	71
Mechanical Shred	8	92
NOXIOUS WEED CONTROL		
Ground Glyphosate Radius	21	781
Ground Triclopyr Radius	10	361
Ground Glyphosate	22	882
Ground Triclopyr	15	450
OTHER TREATMENTS		
Fencing	2	10
Riparian Rehab Planting	1	1

*Interplanting if necessary based on survival exams.

**Second release treatments are only if necessary.

This contributes to my decision to select Alternative 4, as fuel reduction objectives are part of the purpose and need of this project, and combined with other factors, including herbicide risk and noxious weed management, to choose Alternative 4 over Alternative 1. Both Alternatives 1 and 4 also meet fuel objectives to a greater degree than Alternative 3, and certainly more than Alternative 2.

Noxious Weed Management: This alternative best meets the Purpose and Need by reducing the competition and fine fuel continuity from noxious weeds, improving plant species diversity by reducing weed density, and reducing risk of weed invasion and spread in all areas with reforestation, fuels reduction or plantation thinning treatments over the most project acres (equal to Alternative 3). Alternative 4 best responds to the Sierra Nevada Forest Plan Amendment Record of Decision (2004) goals for noxious weeds, including measures to prevent introduction of new invaders, early treatment of new infestations, and containment and control of established infestations over the most project acres (equal to Alternative 3). Under Alternatives 3 and 4, weed herbicide mitigation treatments are proposed not only for reforestation units (as in Alternative 1), but also all other treatment units that have habitat-disturbing activities such as broadcast burning, or shredding.

I chose Alternative 4 over Alternative 3 because, combined with the other reforestation and fuel reduction goals, it has the most responsive noxious weed management treatments, in terms of acres treated.

Public Input: I consider Alternative 4 to be responsive to substantive public comments and significant issues (FEIS Chapter I; page I-23), while best meeting the resource-related objectives described above. Alternative 4 responds to the significant public issue regarding the use of aerially-applied herbicides by proposing use only where no other method will accomplish reforestation objectives for site preparation under the existing slope and vegetation conditions. Alternative 4 includes fewer acres of aerial herbicide application than Alternative 1. Obviously, Alternative 4 does not go as far as Alternative 3 in this regard, but Alternative 3 does not meet the project objectives for reforestation and improved fuel profile acres treated as well as Alternative 4. I believe Alternative 4 best balances the public concern about aerial herbicide application with the need to reforest the Larson project area.

Alternative 4 also is responsive to input received from the Tuolumne Band of Me-Wuk Indians. Out of respect for the government-to-government relationship the Stanislaus National Forest has with the Tuolumne Band, Alternative 4 includes an additional measure for protection of culturally important plants, specifically doubling buffers along perennial streams for hand-application of herbicides from 10 feet to 20 feet. I believe that this will provide added protection to those plants associated with riparian areas, in addition to the other measures for protecting cultural resources and providing refugia, specific to the Larson project area.

Summation: In selecting Alternative 4, I have considered the legislative mandates of the Forest Service, the capability of the ecosystem, the need for protection of resources, social concerns, the opinions of other resource management professionals, and public input. I also considered the national, regional, state and local ecosystem management objectives as they relate to this specific area. I believe that this alternative is responsive to the public's concern for ecological, resource, social and economic values in that it provides for the accelerated recovery of a forested ecosystem that was substantially reduced by the fire. In this regard, important values include improved wildlife habitat over the long run, improved wildfire management, improved recreational setting, and improved water quality. It poses a

low risk to public and worker safety, and water quality will be maintained well within basin water quality objectives. Alternative 4 provides the mix of treatments, including aerially-applied herbicides, I consider most appropriate for recovering a forested ecosystem in this project area. For these reasons, I judge Alternative 4 to have the greatest long-term net benefit to the American public and the most long-term benefit to the ecosystem.

Alternatives Considered and Not Selected

In addition to Alternative 4, I considered the three other alternatives fully developed in the EIS. The EIS (Chapter II) contains detailed descriptions, mitigation measures and comparisons of all alternatives. The EIS (Chapter III) contains detailed descriptions of the affected environment and environmental consequences. The following provides a brief description of the three other alternatives considered in detail, along with my reasons for not selecting them.

Alternative 1 (Proposed Action)

Alternative 1 proposes project implementation of site preparation, planting, release, precommercial thinning, fuel reduction and noxious weed management treatments using all available techniques, methods, and equipment, including aerial (helicopter) herbicide applications for site preparation. Aerial applications are proposed in blocks (several stands joined together) to promote efficiency (optimal and essential for reforestation) and to reduce health risks to workers by limiting potential exposure to herbicides (aerial applications are shorter in duration and require a smaller number of workers than ground applications). Noxious weed control measures are included within units with silvicultural herbicide applications.

I did not select Alternative 1 because it is less responsive to social considerations, and includes more risk of adverse impacts from aerially-applied herbicides than Alternative 4. Alternative 1 has less treatment acres for noxious weeds, in that only stands with reforestation herbicide treatments will have weed mitigations. Project activities within other treatment stands may increase the likelihood of weed spread without mitigations. The differences with Alternative 4 in meeting reforestation and fuel reduction resource objectives are slight.

Alternative 2 (No Action)

Under Alternative 2 (No Action), current management plans would continue to guide management of the project area. No reforestation, fuel reduction, or noxious weed management activities would be implemented.

I did not select Alternative 2 (No Action) as it does not meet the Purpose and Need of the project. Objectives for reforestation, fuel reduction, and noxious weed management would not be met. Only 16% of the project area would have conifer stocking (in existing plantations, natural regeneration, and residual mixed conifer stands). Fuel loading will continue to naturally increase with brush growth. There is a high potential for a high intensity wildfire, which would threaten natural and cultural resources. The diversity of native plant species will remain low due to dense and aggressive infestations of noxious weeds.

Alternative 3

Alternative 3 proposes implementation of site preparation, planting, release, precommercial thinning, fuel reduction, and noxious weed treatments using *only ground-based* techniques, methods, and equipment. The primary distinguishing characteristic of Alternative 3 is the elimination of aerial herbicide application for site preparation. Alternative 3 proposes: slightly more ground herbicide applications and mechanical shredding; substantially less planting, inter-planting and release; and slightly less prescribed burning than Alternative 1. Noxious weeds would be treated with herbicide applications in treatment stands not otherwise planned for herbicide treatments (as well as those stands with silvicultural herbicide treatments).

I did not select Alternative 3 as it does not meet resource objectives for reforestation and fuel reduction as well as Alternative 4. With over 1,100 acres less conifer planting than Alternative 4, only 36% of the project area (proposed plantations, existing plantations, natural regeneration, and residual mixed conifer stands) would develop into a mixed conifer forest. Approximately 1,400 acres of brush on steep slopes that would not be treated with herbicide prior to prescribed burning will not meet site preparation goals, and will continue to pose a long-term threat to adjacent plantations and other values at risk of high-intensity wildfire. Less conifer forest and discontinuity of forested stands will fragment wildlife habitat. Without aerial application of herbicides, Alternative 3 poses no risk of aerial herbicide drift into water, but this risk is minimized in the selection of Alternative 4 by the specified management requirements. Although the use of herbicides presents some risks to oaks and other hardwoods, the risk is considerably lower without aerial application, in that ground applications can be targeted to specific species with more accuracy than aerial applications. This risk is considered minor in the decision to select Alternative 4, and natural recovery of oaks and hardwoods is expected. The elimination of risks of these adverse effects in Alternative 3 is outweighed by the need to meet project objectives for reforestation, improved fuel profiles and noxious weed management to a greater degree across the Larson project landscape, as proposed in Alternative 4.

Alternatives Considered but Eliminated from Detailed Study

NEPA requires federal agencies to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). Public comments received in response to the Proposed Action and Draft EIS provided suggestions for alternative methods for achieving the Purpose and Need. Several alternatives were considered, but eliminated from detailed study (FEIS, Chapter II) for the following reasons:

1. **Implementation of the proposed action, with the exception of chemical treatments for site preparation, release, or noxious weed control:** This alternative does not meet the purpose and need of the project, nor does it consider the essentiality of herbicide use. Other means of vegetation control were considered, including mechanical cutting, manual grubbing, and livestock browsing. Alternative methods to herbicide were examined in this alternative. Other methods alone have not been shown to effectively limit competition on the scale of reforestation such as the Larson Project (FEIS, page II-2).

2. **Implementation of the proposed action, with the exception of the use of the herbicide triclopyr:** This alternative does not meet the purpose and need of the project for noxious weed control as triclopyr is effective for treating noxious weeds while at the same time retaining grasses. Grass competition is effective at reducing the spread of noxious weeds. Triclopyr also is essential for reforestation on sensitive soils, where grasses would be retained to minimize potential erosion (FEIS, page II-5).
3. **Implementation of the proposed action, with the exception of aerial herbicide application, and the exception of chemical treatments in Ned Gulch, and including increased buffers, only one chemical treatment per acre, and avoidance of hardwoods ("Modified Alternative 3"):** This alternative was proposed by John Buckley, Executive Director of the Central Sierra Environmental Resource Council, in public comment on the Draft EIS, and parts of it were echoed by other respondents to the Draft EIS. The primary differences between this "Modified Alternative 3" and the action alternatives analyzed fully in the EIS are the key points of "one chemical treatment per reforestation acre" and "no reforestation in Ned Gulch." Multiple chemical treatments for site preparation, release and noxious weed management are essential to the Purpose and Need. Reforestation in Ned Gulch is important to meeting the Purpose and Need for reforestation of capable and suitable lands within the project area. "Modified Alternative 3" does not meet the Purpose and Need of the project, nor does it consider the essentiality of herbicide use (FEIS, page II-6).

Environmentally Preferable Alternative

I judge Alternative 4 to be the environmentally preferable alternative. In this context, environmentally preferable means the alternative that best meets the direction of the National Environmental Policy Act of 1969 with regards to attaining "the widest range of beneficial uses of the environment without degradation, risk to health and safety, or other undesirable or unintended consequences" with the least damage to the physical and biological environment. The alternative should preserve "important historic, cultural, and natural aspects of our natural heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice."

In making this determination, I acknowledge that many members of the public and the environmental community would disagree that herbicide application, particularly aerial herbicide application, could be considered environmentally preferable. I also recognize that there is a potential for increased risk of adverse environmental effects in the use of aerially applied herbicides. Therefore, I carefully considered the differences between Alternatives 3 and 2, which propose no aerial application, and Alternatives 1 and 4, which do propose aerial application.

I have reached my decision that Alternative 4 is the environmentally preferable alternative by considering both the short-term risks and long-term benefits. The following factors were particularly considered:

- **Adverse effects of aerially applied herbicides:** The EIS clearly demonstrates that herbicide use is essential for meeting the proposed action goals and objectives. With aerially applied herbicides, potential short-term adverse effects to brush, riparian, and oak vegetation, and to the health and habitat of brush-dependent wildlife species are

expected. Alternatives 2 and 3 eliminate this risk of adverse effect from the aerial treatments; Alternatives 1 and 4 include this risk.

Alternative 4 is preferable over Alternative 1 in that ground-based herbicide application presents slightly lower risks to some resource values than aerially applied herbicides. For site preparation, Alternative 4 has about 400 more acres of ground site preparation application than Alternative 1.

There is a reduced short-term risk to riparian vegetation, water quality, cultural resources (including traditionally used plant species and archaeological sites) and wildlife from ground herbicide application under Alternatives 3 and 4, in that ground application buffers on perennial water are doubled in size over those proposed for Alternative 1 (from 10 feet to 20 feet). The increased buffers also have the added benefit of reducing the risk of uncertainty associated with the range of detectable low-level concentrations of triclopyr in water.

In the long-term, the use of aerially applied herbicides for site preparation will allow for more acres of successful reforestation, returning more of the project area to the desired future forested condition. Alternatives 1 and 4 achieve a greater potential for long-term mature forest recovery than Alternative 3, with over 1,100 more acres replanted. In this regard, there is somewhat of a difference between Alternative 4 and Alternative 1. Alternative 4 has less risk of short-term adverse effects from aerial herbicides than Alternative 1 because 823 fewer acres are proposed for aerial treatment. However, only 188 fewer acres would be reforested under Alternative 4.

- **Adverse effects of wildfire:** In the short-term, newly established plantations are at risk of destruction by wildfire. Young plantations are vulnerable to even the lowest intensity fires. In the present condition of the Larson project area, the threat of a high-intensity wildfire persists as a short-term risk, but it is a risk that declines over time as conifer stands become more fire resilient.

The long-term benefits of Alternative 4 over Alternatives 2 and 3 include environmental protection of resources at risk from fire. Aerial site preparation and reforestation of the upper slopes on the west end of Anderson Valley and in Ned Gulch under Alternative 4, combined with other reforestation units, will create the long-term potential to provide for a mature, more fire-resistant forest that would result in less intense and slower spreading wildland fires. The lower fire potential will provide protection for existing and reestablished conifer stands, and other resources at risk, particularly Yosemite National Park and the Merced Grove of Giant Sequoias, but also including Grizzly Mountain Research Natural Area (RNA), private land, spotted owl PACs and HRCAs, heritage resources, and critical deer habitat. There is little difference between Alternative 4 and Alternative 1 in this regard.

Alternative 4 converts 8.7% more acres of brush to mixed conifer forest than Alternative 3, with the short-term effect of reduction of brush species, but attaining the long-term beneficial effect of a stable forest more resistant to stand-replacing fire. The difference between Alternative 4 and Alternative 1 is negligible, with only 1.4% less reforestation in Alternative 4 than Alternative 1.

- **Adverse effects of noxious weed spread and invasion:** Ground disturbance from heavy machinery, prescribed fire, or conifer planting encourages the germination and

spread of noxious weeds. Alternatives 3 and 4 better address the short- and long-term undesired consequences of noxious weed invasion and spread resulting from project activities than Alternative 1. Under Alternatives 3 and 4, all areas of reforestation, fuel reduction or plantation thinning where weeds are present will be chemically treated to prevent new infestations and the spread of existing weeds due to project activities, to manage the adverse effects of noxious weeds on ecosystem function, to reduce the contribution to fine fuels, to reduce competition in plantations, and reduce impacts to native plants. Under Alternative 1, only those stands with silvicultural herbicide treatments would have noxious weed applications. Weed control would occur on 463 fewer acres under Alternative 1 than Alternatives 3 and 4. No weed control would occur under Alternative 2.

I consider Alternative 4 to be environmentally preferable because it provides for the greatest long-term benefit. It results in successful reestablishment of a forested ecosystem with diverse structure and composition across the landscape, at a level greater than the other alternatives which do not attempt to reforest as many acres (Alternative 3), have a lesser chance of succeeding in returning a greater portion of the area to a forested setting (Alternative 2), or treat fewer acres of noxious weed infestation and spread (Alternative 1). Alternative 4 provides for the widest range of long-term beneficial uses in increasing the conifer component for mature-forest dependent wildlife, increasing thermal cover for deer, protecting Threatened, Endangered and Sensitive plant and animal species, reducing noxious weeds, preserving cultural resources, and protecting values at risk due to fire.

Alternative 4 achieves this in ways that will have only short-term negligible risk of environmental degradation and public and worker safety. Damage to the physical or biological environment is limited to short-term effects, primarily to vegetation targeted for treatment. The risk to human health and safety in terms of herbicide exposure days is slightly higher, but not significant, under Alternative 4 compared to Alternative 1.

Public Involvement

Public involvement occurred throughout the planning process as described below.

Scoping

In an effort to reach interested individuals and organizations, the Forest mailed approximately 120 scoping letters in November 2002 to request comments on the Proposed Action. In addition, the Forest Service published a Notice of Intent (NOI) in the Federal Register on December 9, 2002¹. The NOI asked for public comment on the proposal through January 15, 2003. The Forest's Schedule of Proposed Actions listed this project beginning in 1997, and continuing to the current issue.

The Forest Service also participated in numerous meetings and field trips with State and Federal Agencies and private organizations such as Yosemite National Park, the California Department of Fish and Game and the Mule Deer Foundation, the US Fish and Wildlife Service, and the Central Sierra Environmental Resource Center.

¹ Federal Register, Volume 67, Number 236, pages 72903-72904.

Consultation with Indian Tribes and interested Native Americans has been ongoing throughout the planning process, beginning in 1997. Presentations, field trips, phone calls and correspondence have been made with the Tuolumne Band of Me-Wuk Indians and the American Indian Council of Mariposa County, and interested native people. In addition, the project was presented to the Tuolumne Band as part of the Annual Tribal Consultation Day each year since 1997, with that information mailed to other local Tribes.

Issues

Utilizing comments submitted during the scoping period, the Forest Service separated issues into non-significant and significant issues. Non-significant issues are those: 1) outside the scope of the proposed action; 2) already determined through law, regulation, Forest Plan, or other higher level decision; 3) irrelevant to the decision to be made; 4) conjectural and not supported by scientific or factual evidence; or 5) general comment. Significant issues are used to generate alternatives and are directly or indirectly caused by implementing the proposed action. Three significant issues were identified by the public (FEIS, page I-23):

1. **Aerial application of herbicides represents an unacceptable increase in risk to people and the environment, as compared to ground-based application of herbicides:** This issue was addressed in Alternatives 3 and 4. Alternative 3 proposes only ground herbicide applications. Alternative 4 proposes aerial application of herbicides only where no other method will accomplish reforestation objectives for site preparation under the slope and vegetative conditions that exist.
2. **Herbicides represent unknown or unacceptable risks to humans, wildlife, and the environment:** Non-herbicide alternatives have been analyzed in previous projects. Where and when non-herbicide treatments are effective has been well established through scientific methods and extensive experience on the Stanislaus National Forest. By agency policy, non-herbicide methods are planned for those situations where they are shown to be effective by science or experience, and herbicides will be used for those situations where non-herbicide techniques will not meet management objectives. Although herbicides are toxic to target plants, science and experience has shown that risks to wildlife, humans and water quality are low and can be managed. A strictly non-herbicide alternative was considered but eliminated from detailed study. Where non-herbicide treatments would be effective for site preparation (for example, where slopes would allow mechanical equipment to operate), they were included in the action alternatives.
3. **Application of triclopyr represents unacceptable risk to wildlife and the environment:** Science and experience have shown that risks to humans and wildlife from the formulation of triclopyr proposed for this project are low and can be managed. The Larson project proposes to use the triclopyr formulation for noxious weed control, site preparation and release in those areas where retention of grasses is necessary to inhibit the spread of noxious weeds and provide ground cover to minimize erosion on sensitive soils. A non-triclopyr alternative was considered but eliminated from detailed study.

Response to Comments

The Environmental Protection Agency published a Notice of Availability (NOA) for the Draft EIS in the Federal Register on October 31, 2003¹; the opportunity to comment ended 45 days following that date, on December 15, 2003. Two public informational meetings were held, in Groveland, CA on November 12, 2003, and in Sonora, CA on November 13, 2003. News about the project was published in the Sonora Union Democrat and Stockton Record newspapers, broadcast on local radio stations and on the internet. Numerous private organizations informed their members and the public about the Larson project through their websites.

In response to the Forest's request for comments, the public and other agencies submitted 50 individual letters with 393 comments offered (279 non-substantive and 114 substantive). The Final EIS includes the Forest Service response to public comments (Appendix M).

Findings Required by Other Laws and Regulations

Clean Air Act

The Clean Air Act makes it the primary responsibility of states and local governments to prevent air pollution and control air pollution at its source. States must have a plan that provides for implementation, maintenance, and enforcement of the primary ambient air quality standard. The State of California has a plan. The procedures outlined in the Final EIS are sufficient to minimize air quality concerns. This project meets the Clean Air Act.

Clean Water Act

Federal agencies are required by the Clean Water Act to cooperate with State agencies in preventing, reducing, and eliminating pollution in concert with programs for managing water resources. This project meets these objectives through the incorporation of Best Management Practices (listed in Chapter II of the FEIS). The Forest Service will consult with the Regional Water Quality Board, Central Valley Region to determine whether permitting is necessary for the proposed aerial herbicide application. If a permit is required, it will be obtained prior to implementation of the project. This project meets the Clean Water Act.

National Environmental Policy Act (NEPA)

The NEPA requires that Federal agencies complete detailed statements on proposed actions that significantly affect the quality of the human environment. The Act's requirement to prepare an environmental impact statement is designed to provide decision makers with a detailed accounting of the likely environmental effects of a proposed action prior to adoption, and to inform the public of, and allow comment on, such effects. The Final EIS does a comprehensive job of analyzing the alternatives and displaying the alternatives and displaying the environmental effects. The procedural requirements of NEPA have been followed.

¹ Federal Register, Volume 68, Number 211, page 62072.

National Forest Management Act (NFMA)

Projects occurring on National Forest System lands must meet minimum specific management requirements under 36 CFR 219.27 (1982). This project and the Final EIS address each as follows:

- The management prescriptions discussed in the Final EIS meet all of the resource protection requirements of the CFRs.
- The project was reviewed by a certified silviculturist and found to be in compliance with all aspects of the silvicultural practices requirement.
- This project is consistent with the requirements for riparian areas.
- This project meets the requirements for soil and water.
- Biological Evaluations (BE) were prepared for Forest Service sensitive aquatic wildlife, terrestrial wildlife, and botanical species. The wildlife BEs concluded that the Larson Project may affect individuals, but is not likely to result in a trend toward Federal Listing or loss of viability for the foothill yellow-legged frog, western pond turtle, northern goshawk, great gray owl, California spotted owl, pallid bat, Townsend's big-eared bat, western red bat, Pacific fisher, American marten, Sierra Nevada red fox, or California wolverine. The Larson Project will not affect the limestone salamander, willow flycatcher, or peregrine falcon. The sensitive plant BE concluded that the Larson Project may affect individuals, but is not likely to result in a trend toward Federal Listing or loss of species viability for the species *Clarkia australis*, *Eriophyllum congdonii*, *Eriophyllum nubigenum*, *Mimulus filicaulis*, or *Mimulus pulchellus*.

Endangered Species Act (ESA)

Section 7(a)(2) of the ESA requires that Federal agencies consult with the United States Fish and Wildlife Service and National Marine Fisheries Service, as appropriate, to ensure that their actions do not jeopardize the continued existence of species listed as threatened or endangered under the ESA, or destroy or adversely modify their critical habitat. Biological assessments (BA) were prepared for federally proposed, threatened, or endangered aquatic wildlife species and terrestrial wildlife species possibly occurring in the project area. Implementation of the project would have no effect on the valley elderberry longhorn beetle or bald eagle. The BA determined that implementation of the project may affect, but is not likely to adversely affect, the California red-legged frog or its designated critical habitat. Informal consultation and concurrence was reached with the US Fish and Wildlife Service.¹

National Historic Preservation Act (NHPA)

This project is in accordance with the stipulations of the *Programmatic Agreement Among the USDA Forest Service, Pacific Southwest Region, California State Historic Preservation Officer, and Advisory Council on Historic Preservation Regarding the Identification, Evaluation and Treatment of Historic Properties Managed by the National Forests of the Sierra Nevada, California* of 1996, as amended. The Programmatic Agreement provides for satisfaction of the Forest's responsibilities for individual undertakings under the NHPA.

¹ United States Department of the Interior, Fish and Wildlife Service, Informal Consultation letter dated January 30, 2004.



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Forest Plan Consistency

The Regional Forester approved the Stanislaus National Forest Land and Resource Management Plan (Forest Plan) and Environmental Impact Statement on October 28, 1991. The Forest Plan, as amended, provides direction for restoration of species composition and structure following large scale, stand-replacing disturbance events, at a pace faster than natural succession, to accelerate the development of key habitat and old forest characteristics. As described above, my decision is consistent with, and conforms to, the applicable Management Direction from the current Forest Plan, as amended.

Environmental Justice

Executive Order 12898 requires federal agencies to conduct activities related to human health and the environment in a manner that does not discriminate or have the effect of discriminating against low-income or minority populations. Environmental Justice concerns have been considered and the results indicate the decision will have no disproportionately high and adverse human health or environmental effects on minority populations or low-income populations within the context of NEPA or other existing laws. Low-income and minority populations comprise more than ten percent of the total population in the vicinity (Forest Plan). The activities proposed for the project would not discriminate against these groups, and in fact may produce a short-term benefit in the form of employment with local contractors. Based on the composition of the affected communities, and the cultural and economic factors, the activities that are proposed would have no disproportionately adverse effects to human health or safety or environmental effects to minorities, those of low income, or any other segments of the populations. Scoping was conducted to elicit comments on the proposed action from all potentially interested and affected individuals and groups without regard to income or minority status. As analyzed in the EIS, no significant negative impacts on the natural or physical environment are expected. Compared to current conditions, this decision will improve the natural and physical environment.

Implementation

Project implementation could begin in the fall of 2004.

If no appeals are filed within the 45-day time period, implementation of the decision may begin immediately after complying with the timeframes and publication requirements described in 40 CFR 1506.10(b)(2). When an appeal is filed, implementation may occur on, but not before, the 15th business day following the date of appeal disposition (36 CFR 215.2). In the event of multiple appeals, the implementation date is controlled by the date of the last appeal disposition.

Administrative Review or Appeal Opportunities

This decision is subject to appeal pursuant to 36 CFR 215. Only those individuals and organizations who submitted substantive written or oral comments during the 45-day comment period (36 CFR 215.6) and otherwise meet the specific requirements of 36 CFR 215.13 have standing to appeal. The Environmental Protection Agency published a Notice of Availability (NOA) for the Draft EIS in the Federal Register on October 31, 2003; the opportunity to comment ended 45 days following that date, on December 15, 2003. Appeals must be filed within 45 days from the publication date of legal notice of this decision in the Sonora Union Democrat newspaper. Notices of appeal must meet the specific content requirements of 36 CFR 215.14. An appeal, including attachments, must be filed (regular mail, fax, e-mail, hand-delivery, express delivery, or messenger service) with the appropriate Appeal Deciding Officer (36 CFR 215.8) within 45 days following the publication date of the legal notice. The publication date of the legal notice is the exclusive means for calculating the time period to file an appeal (36 CFR 215.15 (a)). Those wishing to appeal should not rely upon dates or timeframe information provided by any other source.

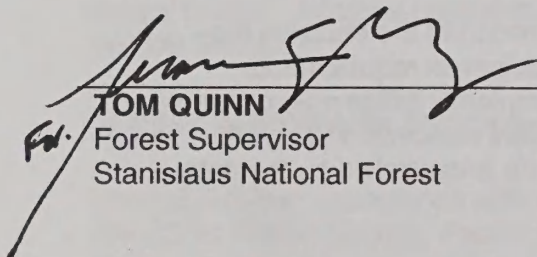
Appeals must be submitted to the Appeal Deciding Officer: Jack Blackwell, Regional Forester, USDA Forest Service, 1323 Club Drive, Vallejo, CA 94592. Appeals may be submitted by FAX [707-562-9091] or by hand-delivery to the Regional Office, at the address shown above, during normal business hours (Monday-Friday 8:00am to 4:00pm). Electronic appeals, in acceptable [plain text (.txt), rich text (.rtf) or Word (.doc)] formats, may be submitted to appeals-pacificsouthwest-regional-office@fs.fed.us [Subject: Larson EIS].

Information Contact

For additional information concerning this decision or the Forest Service appeal process, contact John Maschi [jmaschi@fs.fed.us], Forest Planner; Stanislaus National Forest; 19777 Greenley Road; Sonora, CA 95370; (209) 532-3671 ext. 317.

Signature and Date




F.S. TOM QUINN
Forest Supervisor
Stanislaus National Forest

7/7/04
Date